

## Tai Chi and physical performance

J Gerontol A Biol Sci Med Sci. 2006 Feb;61(2):184-9. Wolf SL, O'Grady M, Easley KA, Guo Y, Kressig RW, Kutner M. The influence of intense Tai Chi training on physical performance and hemodynamic outcomes in transitionally frail, older adults. // Department of Rehabilitation Medicine, Emory University School of Medicine, 212 C Rehabilitation Center, 1441 Clifton Rd. NE, Atlanta, GA 30322, USA. swolf@emory.edu

**BACKGROUND:** Few data exist to evaluate whether Tai Chi (TC) training improves physical performance and hemodynamic outcomes more than a wellness education (WE) program does among older fallers transitioning to frailty. **METHODS:** This 48-week randomized clinical trial was provided at 10 matched pairs of congregate living facilities in the Atlanta metropolitan area to 291 women and 20 men, who were transitionally frail,  $\geq 70$  years old, and had fallen at least once within the past year. Pairs of facilities were randomized to either TC exercise ( $n = 158$ ) or WE (control) interventions ( $n = 153$ ) over 48 weeks. Physical performance (freely chosen gait speed, reach, chair-rises, 360 degrees turn, picking up an object from the floor, and single limb support) and hemodynamic outcomes (heart rate and blood pressure) were obtained at baseline and after 4, 8, and 12 months.

**Results:** Mean percent change (baseline to 1 year) for gait speed increased similarly in both cohorts (TC: 9.1% and WE: 8.2%;  $p = .78$ ). However, time to complete three chair-rises decreased 12.3% for TC and increased 13.7% for WE ( $p = .006$ ). Baseline to 1 year mean percent change decreased among TC and increased within WE cohorts for: body mass index (-2.3% vs 1.8%;  $p < .0001$ ), systolic blood pressure (-3.4% vs 1.7%;  $p = .02$ ), and resting heart rate (-5.9% vs 4.6%;  $p < .0001$ ).

**Conclusions:** TC significantly improved chair-rise and cardiovascular performance. Because TC training reduced fall occurrences in this cohort, factors influencing functional and cardiovascular improvements may also favorably impact fall events.